

## behr Devices

for standard analysis in fat and oil



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Dear analyst,

Throughout the world fat and oil analysis basically consists of a fixed set of determinations. These determinations are performed according to established standard methods which frequently require specialised equipment for digestion, extraction, distillation and titration etc.

behr Labor-Technik GmbH from Düsseldorf/ Germany are experts in the field of fat and oil analysis and manufacture equipment that matches the requirements of the standard methods.

Please, take a look at the following survey of our equipment for basic methods of fat and oil analysis. If you do not find the analysis you have to perform, feel free to contact us. This is just a selection of frequently applied methods.

## Extraction

Oilseeds - Determination of **oil content** B-I 5 (12)

Residual oil content (**petroleum ether method I**)  
B-II 4a (03)

Crude fat (**petroleum ether method II**) B-II 4b (87)

Margarine - determination of **non-fat** K-I 3

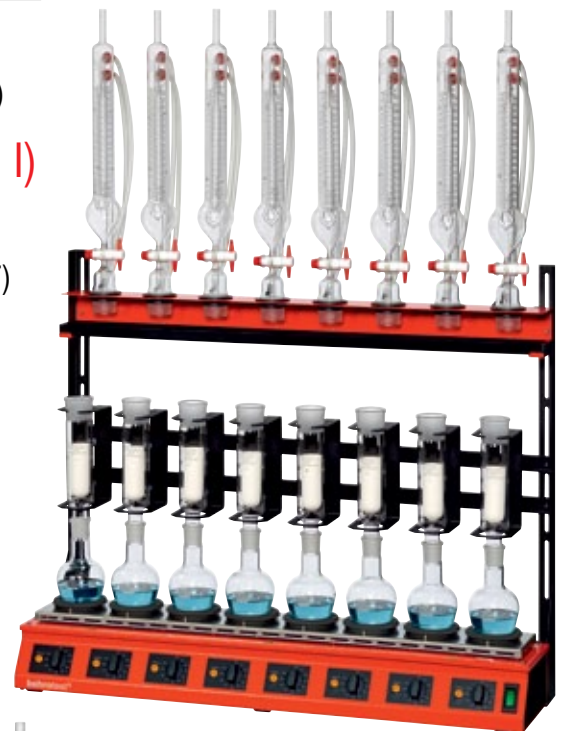
Extractors according to Twisselmann with 250 ml flat-bottomed flasks

- 1** ■ Extraction units for 1 sample place
- In-line extraction devices for 4, 6 or 8 sample places

Margarine – determination of **fat content** K-I 2a

Extractors according to Soxhlet with tap and 250 ml flat-bottomed flasks

- 2** ■ Extraction units for 1 sample place
- 3** ■ In-line extraction devices for 4, 6 or 8 sample places



**1** R 108 T-FB



**3** R 108 S



**2** KEX 100 F-FB

Find detailed information in our special leaflet: The behr range for Extraction/Distillation

# Kjeldahl

## Determination of **crude protein content** B-II 6 (89)

- 1** ■ Infrared quick digestion system with 6 or 12 sample places for digestion vessels of 250 ml volume
- 2** ■ Standard Kjeldahl block digestors with 8, 12 or 20 sample places for digestion vessels of 250 ml volume
- Kjeldahl block digestors with fully automatic lift with 12 or 20 sample places for 250-ml digestion vessels
- 3** ■ 2-step acid fume extractor (scrubber)
- 4** ■ Steam distillers
- 5** ■ Titration stand



**1** InKjel 1225 TCP



**2** K 12



**4** S 4



**3** behrosog 3

Find detailed information in our special leaflet: Kjeldahl method for determining nitrogen



**5** STI

# Distillation/Reflux Distillation

## Determination of **saponification value** C-V 3 (02)

The complete programmable distillation unit consists of:

- 1**
  - 6 or 12 round digestion vessels 250 ml
  - 25 freely configurable programs for block temperature and distillation time
  - integrated magnetic stirrer with the separate control unit
- optionally:
- 2**
  - titration station HTI 9W



**1** VFZ 12

## Isolation of **Unsaponifiables** (petroleum ether method) C-III 1 (14)

## Isolation of **Unsaponifiables** F-II 1 (75)

## Two-phase titration of cation-active tensides

H-III 10 a (92)

## Sulfosuccinic acid esters – determination of dioctyl sulfosuccinic acid esters H-IV 4 a (94)

- 3**
  - Reflux distillers with 250-ml round-bottom flasks for 1, 4, 6, or 8 simultaneous distillations



**2** HTI 9W

**3** RH 254

## Determination of **vitamin A** F-II 2 c (00) and **vitamin E (tocopherols und tocotrienols)** F-II 4 a (00) after saponification

The complete apparatus consists of:

- 4**
  - Reaction vessels (Clear glass or amber glass)
  - behr high performance glass coolers
  - Cooling water distribution strip ensures uniform cooling at sample positions
  - Precision heating block with integrated magnetic stirrers
  - Separate control unit with very precise temperature control
  - Flowmeter for nitrogen

optionally:

- 5**
  - KW 6 cooling trough



**4** VAE 6 together  
**5** with KW 6

Classic apparatus with amber glass:

- 6** ■ saponification apparatus with 250 ml round bottom flasks, amber glass, for 4 and 6 places
- Cooling water distribution ensures even cooling at all sample positions
- Practical stand for reflux cooler
- Gas distribution strip with adjustable flow meters



**6** VAE/BG 4

## Gas-chromatographic determination of total glycerol and diglycerol in mono- and diglycerides after saponification C-III 20 (05)

- 7** ■ Reflux distillers with 100 ml round-bottomed flask for 1, 4, 6, or 8 simultaneous distillations

## Active content determination in alkyl dimethylaminioxides H-V 5 (94)

- Reflux distillers with 100-ml Erlenmeyer flasks for 1, 4, 6, or 8 simultaneous distillations



**7** KRD 100

## Alkane sulfonates: Determination of monosulfonates (perforation method) H-IV 2 b (94)

- Distillation apparatus with perforator
- titration station HTI 9W

## Alkane sulfonates: mean equivalent weight determination of the monosulfonates H-IV 2 d (94)

- Distillation apparatus with perforator



**8** BE 6

## Primary, secondary and tertiary amine nitrogen determination of tensides H-III 20 b (98)

- 8** ■ Reflux distillers with air coolers, 6 or 12 sample places. Complete with heating block, control unit and glassware
- titration station HTI 9W

Find detailed information in our special leaflet: The behr range for Extraction/Distillation

# Water determination/ Determination of crude fibre

**Water determination** of fats and oils C-III 13 (97)

**Water determination** of tensides H-III 3 (92)

- 1** ■ Azeotropic distillation device for 1, 4, or 6 sample places

**Determination of crude fibre content** B-II 7 (87)

**Basic Line (manually):**

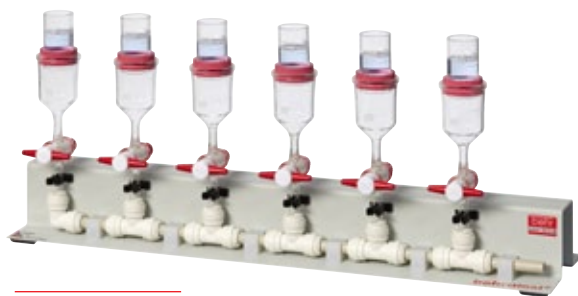
- 2** ■ crude fibre separation apparatus with 4 or 6 sample positions
- 3** ■ filtration unit with 4 or 6 sample positions

**Comfort Line (semi-automatic):**

- 4** ■ Semi-automatic crude fiber extraction unit with 4 or 6 sample positions
- 5** ■ Cold extraction unit for degreasing with 4 or 6 sample positions
- behrotest® Muffle Furnace



**1** KWA 500



**3** SC 6



**2** EXR 6

Find detailed information in our special leaflet:  
behrotest® Equipment for the Determination of Crude Fibre



**4** CF 6



**5** DG 6

# Other procedures

## Crude ash content determination

B-II 5 (89)

- 1** ■ behrotest® Muffle Furnace



**1** MO 8

## Bestimmung des Aschegehaltes von Ölen und Fetten

C-III 10 (97)

- 1** ■ behrotest® Muffle Furnace

## Determination of all volatile components

C-III 12 (97)

- 2** ■ Heating plates or serial heating benches
- Stirring thermometer
- behrotest® Muffle Furnace



**2** KP 4

## Polyglycosulfate determination in sulfated ethoxylized compounds H-IV 9 d (94)

- Exchanger column 2000 ml, with mounting
- Exchanger columns, 25 mm inner diameter, 100 mm length
- Thermostated separation funnel with mounting



**2** HB 4

## Active ingredients determination of condensation products of fatty acids and aminocarbon acids

H-IV 10 (94)

- Exchanger columns, 400 mm length
- Exchanger column 2000 ml, with mounting

# This may also interest you



Detailed information about our products can be found in our special brochures:

- Extraction/Distillation
- Kjeldahl method for determining nitrogen
- Determination of crude fibre

and in our product overview



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Subject to technical modifications, errors excepted.